DRAFT

SUPPLEMENTAL
ENVIRONMENTAL ASSESSMENT
MILITARY TRAINING AREA EXPANSION

U.S. ARMY YUMA PROVING GROUND

May 2013

U.S. Army Garrison Yuma Proving Ground
Environmental Sciences Division
Yuma, Arizona 85365

ACRONYMS AND ABBREVIATIONS

ADEQ	Arizona Department of Environmental Quality
AR	Army Regulation
AGFD	Arizona Game and Fish Department
BLM	Bureau of Land Management
BMP	Best Management Practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
DOD	Department of Defense
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FNSI	Finding of No Significant Impact
Garrison	U.S. Army Garrison Yuma Proving Ground
HMA	Herd Management Area
HMAP	Herd Management Area Plan
KFR	Kofa Firing Range
MAA	Main Administrative Area
MTA	Military Training Area
MWD	Military Working Dog
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
NWR	National Wildlife Refuge
O_3	Ozone
Pb	Lead
$PM_{2.5}$	Particulate Matter (2.5 microns or less in diameter)
PM_{10}	Particulate Matter (10 microns or less in diameter)
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Office
SDZ	Surface Danger Zone
T&E	Threatened and Endangered (species)
tpy	tons per year
USFWS	United States Fish and Wildlife Service
UXO	Unexploded Ordnance
VECS	Valued Environmental Components
VOC	volatile organic compound
WSC	Wildlife of Special Concern
YPG	Yuma Proving Ground
YTC	Yuma Test Center

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1.0 PURPOSE OF AND NEED FOR PROPOSED ACTION

1.1 INTRODUCTION

The National Environmental Policy Act (NEPA; 42 United States Code 4321 *et seq.*), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), Department of Defense (DOD) Directive 4715.9, *Environmental Planning and Analysis* (1996), and *Environmental Analysis of Army Actions* (32 CFR Part 651; March 29, 2002) requires environmental analysis of Army actions affecting human health and the environment.

This Environmental Assessment (EA) is a supplemental analysis to an EA prepared in 2008 (YPG 2008) for the current Military Training Area. This supplemental EA has been prepared to analyze the potential environmental impacts associated with expanding the Military Training Area (MTA) at Site 2 and establishing an additional MTA site, Coyote Den, in the Laguna Region of U.S. Army Yuma Proving Ground (YPG).

1.2 BACKGROUND

YPG encompasses over 1,300 square miles of Sonoran Desert in southwestern Arizona and is located approximately 24 miles northeast of Yuma, Arizona (Figure 1). U.S. Army Garrison Yuma Proving Ground (Garrison) manages the land, facilities, and infrastructure that comprise YPG in support of Yuma Test Center (YTC) and other components. YTC provides a flexible, responsive, innovative, and diverse set of testing capabilities and services in a desert environment in order to meet the current and future needs of the U.S. Armed Forces. YTC has established a mission and vision statement (see inset) as a tool to guide planning and development to meet current and future testing and training needs.

YUMA TEST CENTER

MISSION
Plan, conduct, and report the results of materiel testing for DOD and other customers. Facilitate troop training on YPG land space and in YPG airspace and ensure that training is done safely.

VISION
A premier "Test Center of Excellence" which focuses on doing its missions well and delivers products of high quality to ensure that warfighters have the right tools to perform their missions successfully.

YTC is committed to providing outstanding support to training units and has ideal environmental conditions for acclimating military units to desert climates encountered in the United States Military's current theater of operations. The Military Working Dog (MWD) Program provides military working dogs and handlers for the DOD, other government agencies, and allies through training, logistical support, veterinary support, and research and development for security efforts worldwide. YPG supports this mission at three existing MTA complexes: Cobra Flats, Comanche Flats, and Site 2 (YPG 2008).

Military units use these MTA complexes in addition to other facilities and areas on YPG to perform a variety of operational activities including but not limited to: MWD obedience and explosives scent training, mounted and dismounted patrolling, land navigation, tactical military exercises, bivouac shelter, communications training, physical fitness training, tactical vehicle driver training on existing trails, airmobile training, limited demolitions/explosives/pyrotechnics training, field fortifications/fighting positions training, helicopter rearming and refueling, and tactical vehicle maintenance (YPG 2008).

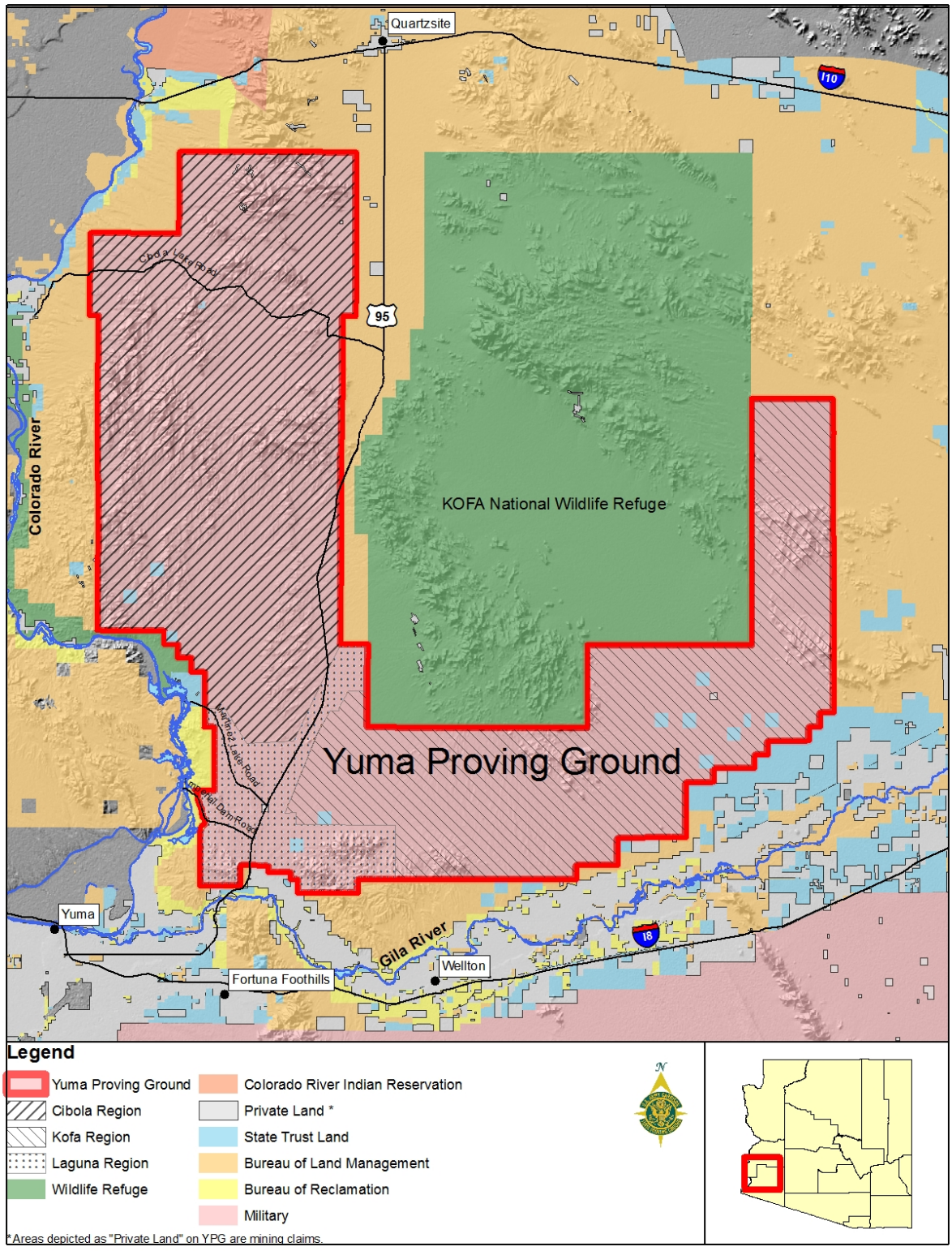

Figure 1: General Location of Yuma Proving Ground

Current tactics, techniques, and procedures require a variety of facilities and structures to be able to support specialized training. The three main MWD training complexes often contain structures simulating small villages, military compounds, or insurgent camps, and are commonly used for explosives scent detection training exercises.

Garrison proposes to establish an additional MWD training complex, Coyote Den, and to expand the Site 2 complex in order to enhance future training activities.

1.3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to enhance and expand the MTA facilities at YPG used by military units, military working dogs, and their handlers. The three existing MTA complexes established in 2008 limit the number of MWD teams able to conduct training at one time, and the layouts are not ideal to support some of the specialized training needs. The downtime required to properly air out facilities used for explosives scent training exercises limits the number of MWD teams able to conduct training at a given time. Furthermore, helicopters are frequently unable to access existing facilities due to conflicts with other mission activities.

Establishing an additional MTA complex (Coyote Den) and expanding Site 2 will enable MWD teams to train simultaneously or independently. The additional facilities will also allow more time for structures used during explosives scent detection exercises to air out between training events. In addition, establishing Coyote Den will eliminate or minimize conflict with other mission activities and their associated danger zones.

1.4 SCOPE OF ANALYSIS

This supplemental EA has been prepared to assess the potential impacts to the natural and human environment associated with implementing the proposed action at YPG and the impacts associated with alternatives considered, including the "no action" alternative.

The evaluation of affected resources and the potential for environmental consequences initially encompassed a broad range of Valued Environmental Components (VECs); however, the potential for environmental impacts to some of the resource areas was determined to be nonexistent, unlikely, or negligible, and they were not carried forward for further detailed analysis (see discussion in Chapter 3). As a result, YPG determined that the proposed action could potentially affect the VECs listed below; therefore, the focus of the analysis in this EA is on these resource areas.

- Air Quality
- Biological Resources
- Cultural Resources
- Health and Safety
- Land Use, Airspace, and Recreation
- Soil Resources
- Transportation and Infrastructure
- Water Resources

Chapter 3 provides a description of these VECs and their context in relation to the proposed action.

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES CONSIDERED

2.1 INTRODUCTION

The proposed action is to establish an additional MWD training complex, Coyote Den, and to expand the Site 2 complex. YTC considered a range of alternatives to accomplish the proposed action, and representatives from mission, engineering, construction, environmental, and others on the YPG Real Property Planning Board were involved in selection and approval of the proposed action. The following criteria were considered during the planning process and used to evaluate each alternative.

- Avoids conflicts with other mission activities and associated safety danger zones
- Located within a Restricted Airspace classification/designation (surface up to at least 30,000 feet)
- Easily accessible for emergency response purposes
- Accessible to existing roads and trails with limited civilian access
- Ability to establish desert urban and rural settings
- Easily accessible to kennel and veterinary facilities
- Accessible to ordnance disposal personnel
- Avoids major drainages to the extent possible
- Avoids interference or potential to damage existing infrastructure (e.g., buried fiber optic cable, roads)
- Avoids ground disturbance to the extent practicable; and
- Avoids cultural areas to the extent practicable

Using information gained from that effort, YPG designed the proposed action with minimal impact on natural resources and land uses to the extent practicable. Based on the above criteria, one action alternative was carried forward for detailed analysis in this EA, Alternative A (proposed action), which is presented in Section 2.2. The no action alternative is also included in this environmental analysis (Section 2.3), as required by CEQ regulations (40 CFR 1502.14(d)) and serves as a benchmark against which the environmental consequences of the proposed action and other alternatives considered are evaluated. Section 2.4 of this EA discusses other alternatives considered but subsequently eliminated from further detailed analysis.

Activities and projects addressed in this EA do not eliminate the need to submit a work order (DA 4283), service order, or other required documents (e.g., dig permits) for the proposed actions required for site development. Further, these actions may still require other environmental permit applications (e.g., storm water or 404 permits) and state or federal regulatory agency approvals.

2.2 ALTERNATIVE A (PROPOSED ACTION) – TO ESTABLISH COYOTE DEN TRAINING AREA AND EXPAND SITE 2 TRAINING AREA

Under Alternative A, YPG will establish a new MWD training village (Coyote Den) and expand the Site 2 training area by establishing or adding additional training villages. The structures and facilities at the "villages" will be similar for both sites under this proposed action. Figure 2 provides the location of the proposed site for Coyote Den, and Figure 3 provides the location of the proposed expansion of Site 2. Appendix A includes additional figures and images of the proposed locations, structures, and facilities.

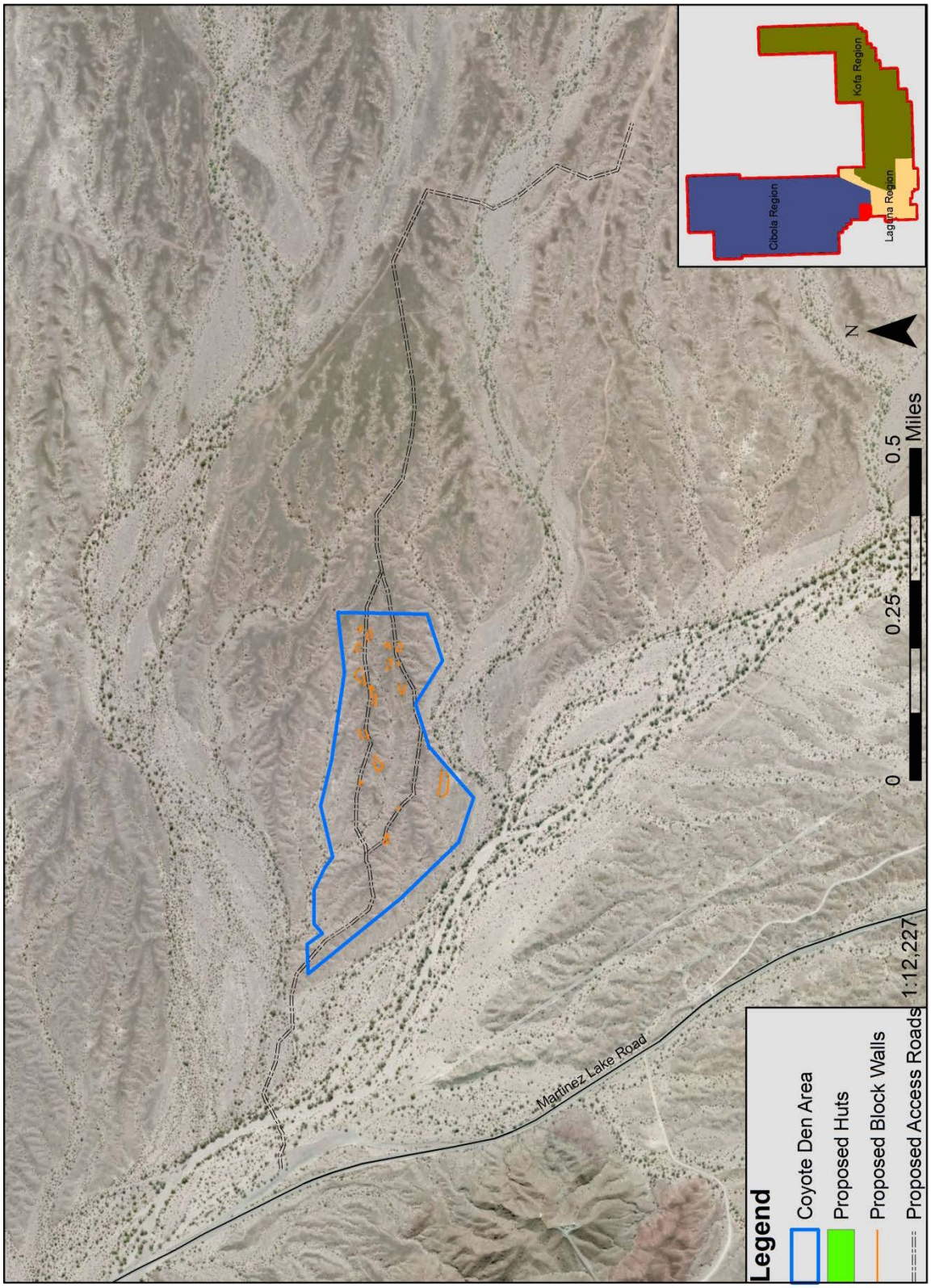

Figure 2: Overview of Proposed Coyote Den Sites

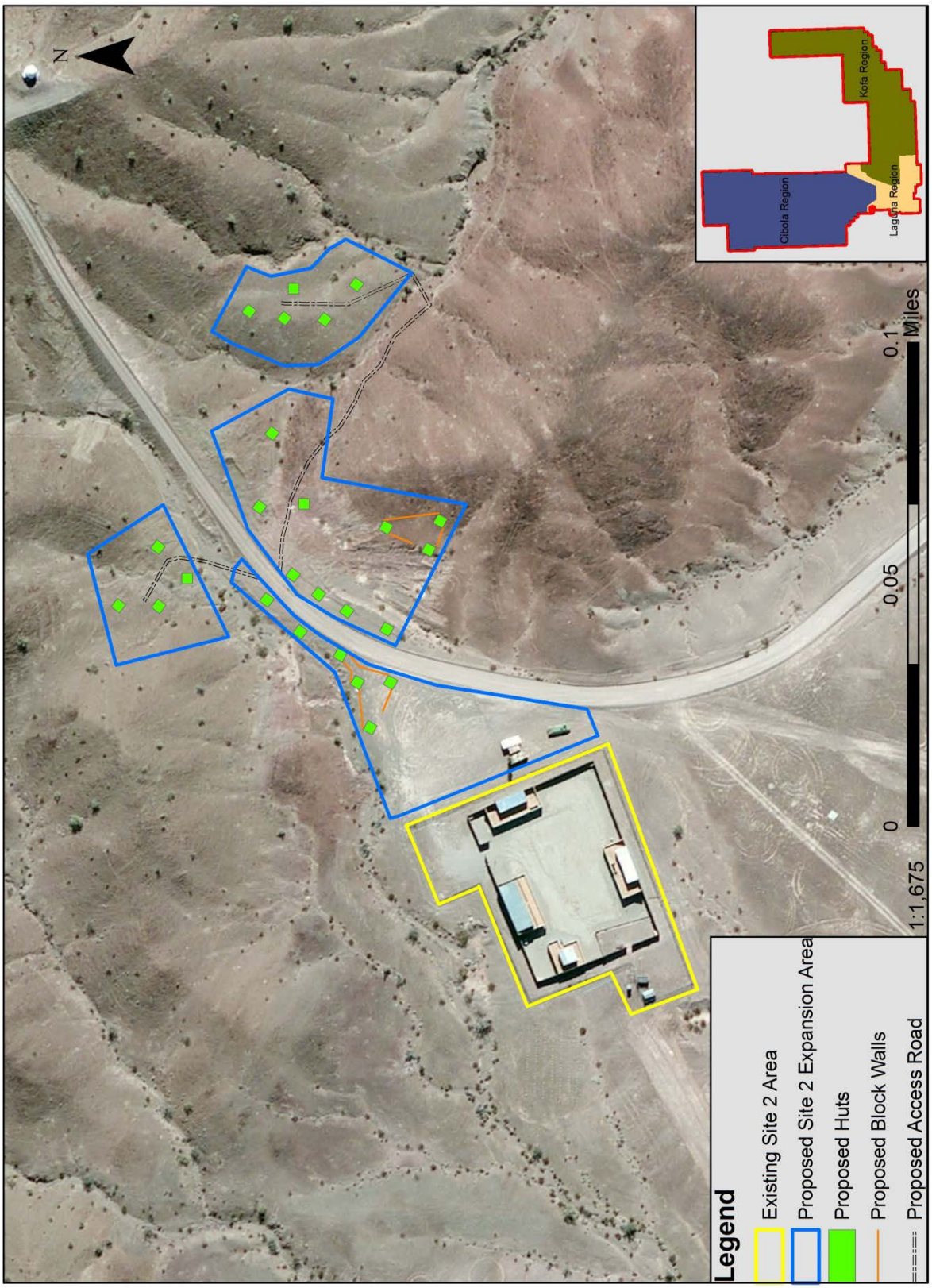

Figure 3: Overview of Proposed Expansion at Site 2

2.2.1 Villages

To represent rural scenarios frequently encountered by MWD teams and other military personnel, mock villages are constructed with numerous structures that emulate huts. These structures can be made of several types of material including adobe, concrete block, wood, or stucco. The typical footprint of one structure is 144 sq.ft. (12'x12'), and floors are native soil; therefore, clearing is typically not required. Building facades are training venues and not real property or habitable facilities. Between 35 and 45 of these structures will be built at Coyote Den, and 20 to 28 structures will be built at Site 2. Five foot tall block walls are also added to some of the grouped structures to enhance training exercises. The overall design and layout of these mock villages (see Figures 2 and 3) allows for optimal training opportunities and replicates real life situations encountered by military personnel.

2.2.2 Construction Activities

Construction activities will take place on a time intensive schedule with several shifts of work throughout the day. Ground preparation will be minimized to maintain natural features like rocks, vegetation, and washes for both training purposes and environmental concerns. To the extent practicable, structures will be adjusted slightly to facilitate ease and safety of construction while promoting minimal disturbance to the landscape. Access roads will be created and may be stabilized by adding Aggregate Base Course (ABC) material to minimize dust and erosion.

2.3 No Action Alternative

Under the no action alternative, Coyote Den will not be established and Site 2 will not be expanded. The no action alternative will severely limit YPG's ability to support the MWD program in conducting efficient and specialized training.

2.4 Alternatives Considered but Eliminated from Detailed Analysis

During the planning process, YPG considered a range of areas and sites to meet the purpose and need of the proposed action, however, they were eliminated because they did not meet one or more of the selection criteria (see section 2.1). Figure 4 provides a map of the alternative sites considered but eliminated from further detailed analysis, and Table 1 provides the selection criteria each site did not meet.

Table 1: Alternative Sites Eliminated From Analysis

Proposed Site #	Criteria for Elimination
Proposed Site 1	Does not avoid culture sites
Proposed Site 2	Does not avoid frequent conflicts with other mission activities and associated safety danger zones
Proposed Site 3	Has potential for civilian access and disturbances due to surrounding land use
Proposed Site 4	Requires extensive ground preparation; Is not easily accessed
Proposed Site 5	Does not avoid frequent conflicts with other mission activities and associated safety danger zones
Proposed Site 6	Does not avoid frequent conflicts with other mission activities and associated safety danger zones

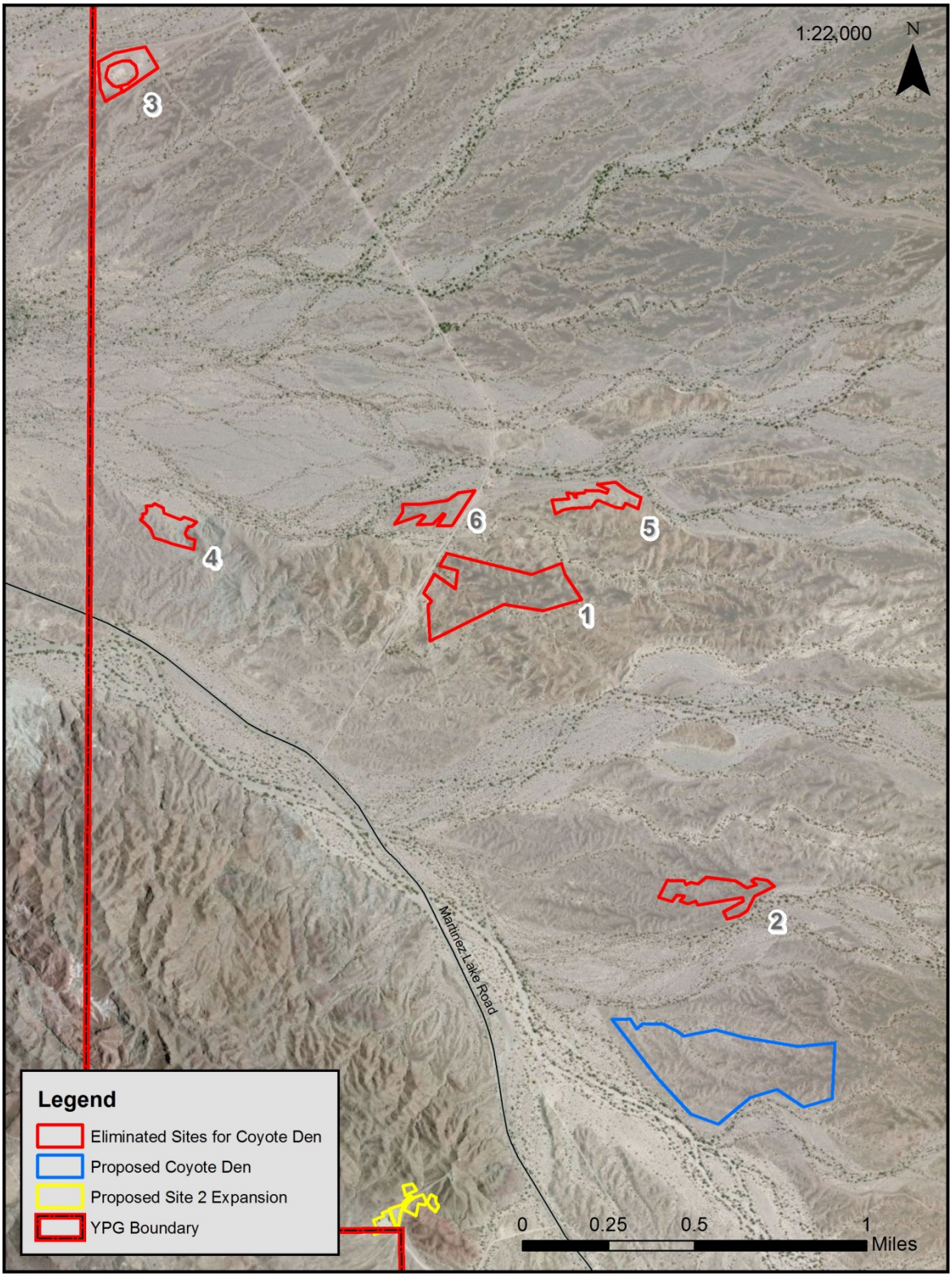

Figure 4: Alternative Sites Eliminated From Analysis

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Environmental effects can be direct, indirect, or cumulative and short-term or long-term. Direct effects are caused by the action and occur at the same time and place. Indirect effects are the reasonably foreseeable consequences of the action but are later in time or further removed in distance from the direct effects. Cumulative effects result from the incremental effect of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

The assessment of potential impacts and significance of implementing the proposed action was made based on the requirements set forth in 40 CFR 1508.27. Impacts are evaluated at three levels: (1) no impact—no impact to the resource is predicted; (2) no significant impact—an effect is predicted, but the impact does not meet the intensity/context significance criteria for the specific resource; and (3) significant impact—an effect (either beneficial or adverse) that meets the intensity/context significance criteria for the specific resource.

The analysis of the affected environment related to the MTA expansion at YPG initially considered a broad range of resources or VECs. The evaluation of affected resources and the potential for environmental consequences conducted by YPG included the VECs listed below in Table 2; however, they were not carried forward for further analysis because the potential for environmental impacts to these resources was determined to be nonexistent, unlikely, or negligible. This process allowed the analysis to focus on those resource areas where potential for an effect associated with implementation of the proposed action was greater.

Table 2: VECs Not Carried Forward for Analysis

Coastal Zone Management: The primary focus of the Coastal Zone Management Act is to effectively manage to preserve, protect, develop, restore, or enhance the resources of the nation's coastal zones. YPG is not located in a coastal area, and there are no activities planned in the proposed action that would impact any coastal resources.
Environmental Justice: Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* requires federal agencies to identify and address adverse human health or environmental effects of their actions on minorities and low-income populations and communities as well as the equity of the distribution of the benefits and risks of their decisions. Activities proposed will not disproportionately affect minority and/or low-income populations through substantial degradation of air or water quality or exposure to hazardous materials, substances, or waste.
Floodplains: Executive Order 11988 *Floodplain Management* restricts federal agencies from constructing in a floodplain. No construction or other modification of a floodplain area is proposed.
Geology and Geography: The scale of activities proposed cannot reasonably be expected to affect these large-scale resource areas; therefore, they were not carried forward for detailed analysis.
Hazardous and Toxic Substances: Federal, state, and local agencies regulate hazardous materials and hazardous waste. Use of regulated substances as a result of the proposed action would be limited to fuel consumption from vehicle use, use training equipment (star clusters and other munitions) and these materaisl will be managed in accordance with applicable guidance and regulations. Unintentional release of hazardous materials or toxic substances due to accidental release would not likely create a substantial potential public health or safety hazard.

Meteorological Conditions (Climate): The CEQ Guidance on Federal Greenhouse Gas Accounting and Reporting (CEQ 2010) defines six types of greenhouse gases of concern because of their heat-trapping abilities and atmospheric lifetimes and thus their global warming potential. The scope and scale of activities associated with the proposed action, primarily from vehicle and equipment use during construction, would not result in significant local or regional emissions of greenhouse gases and would not affect meteorological conditions or result in changes in climate.

Noise: The U.S. Army Public Health Command (formerly the U.S. Army Center for Health Promotion and Preventive Medicine) has developed noise zones to assess military-related noise effects, which consider noise levels along with sociological considerations and compatible land uses. Noise contour maps from the study of YPG indicate that all Zone II and III areas[1] are contained within the bounds of the installation with the exception of one small area located in a remote portion of the Kofa NWR (USAPHC, 2011); therefore, potential noise impacts were eliminated from further analysis.

Prime Farmland: The Farmland Protection Policy Act protects prime or unique farmlands from unnecessary and irreversible conversion to non-agricultural uses. YPG does not contain prime farmlands; therefore, no activities associated with the proposed action will affect any prime farmland.

Socioeconomic Values: The proposed action takes place entirely on YPG and would not have potential impacts associated with employment, income, conflicts with county and local plans, population growth, displacement of persons and businesses, or community disruption.

Visual and Aesthetic Resources: The proposed action will not obstruct, damage, dominate, or substantially modify a scenic view from public viewing areas and will not have a substantial adverse effect on a scenic vista.

Wild and Scenic Rivers: A wild and scenic river, defined as a free-flowing river or segment of a river that has exceptional scenic, recreational, geologic, fish and wildlife, historic, cultural properties, or other similar values, can be designated by act of Congress or by the Secretary of the Interior at the request of a governor as part of the National Wild and Scenic Rivers system. There are no designated Wild and Scenic Rivers located on YPG.

Analysis of impact significance was evaluated based on the significance criteria used in the *U.S. Army Yuma Proving Ground Range Wide Environmental Impact Statement*, (U.S. Army Yuma Proving Ground, 2001) and adapted for use in this analysis. The significance criteria were developed using compliance standards, best professional judgment, and stakeholder input. Table 3 provides a listing of the VECs carried forward for detailed analysis and the significance criteria used to evaluate potential impacts. The following sections provide a description of these VECs and their context in relation to the proposed action and potential environmental consequences.

[1] Land use contours are not meant to imply that sound generating activities cannot be heard beyond the YPG boundary, only that the level of sound does not meet the land use restriction threshold. Land use activities in Zone III areas are those that are not likely to be impacted by sound levels such as industrial activities or the firing positions on the Kofa Range. Land use activities in Zone II areas are restricted to administrative type activities. Zone I areas are unrestricted and the only areas where sensitive receptors, schools, and medical activities for example, can be located.

Table 3: Significance Criteria Used to Evaluate Environmental Effects

VEC	Significance Criteria Used In This Analysis
Air Quality	• Emissions exceed air quality standard established under the Clean Air Act • Contributes considerably to an existing air quality violation • Exposes sensitive receptors to substantial pollutant concentrations • Results in an increase of a criteria pollutant for any designated non-attainment area
Biological Resources	• Habitat necessary for all or part of the life cycle of a species is lost because of the proposed action (e.g. lambing areas, migratory corridors, or wildlife watering areas) • Threatened or endangered species are adversely affected • A regional or local species is extirpated • Ecological processes are damaged to the extent that the ecosystem is no longer sustainable or biodiversity is impaired
Cultural Resources	• Prehistoric and historic sites eligible for the National Register of Historic Places are adversely affected • Native American religious or other cultural activity areas are adversely impacted
Health and Safety	• Public or YPG personnel health or safety is adversely affected • Established Federal, State, and local health and safety laws and regulations are violated • A new off-post safety hazard is created
Land Use, Recreation, and Airspace	• Land is degraded so it cannot be used for current or planned use • Results in conflicts with existing YPG land uses and established off-post land use (especially along the boundary) • Eliminates the regional availability of a recreational opportunity • Results in long-term closure of an important public access point
Soil Resources	• Activities result in severe soil erosion or sedimentation • Soil subsidence occurs over large areas • Permanent contamination of soil occurs that would restrict future land use
Transportation and Infrastructure	• Transportation characteristics are reduced to a level that impacts safety or movement of people, goods, and services • Utilities or infrastructure are taxed beyond their capacity to support installation mission requirements • A substantial negative effect to the YPG mission occurs
Water Resources	• Surface water is contaminated by storm water runoff to levels above Federal or State water quality standards • "Waters of the U.S." are degraded by actions that exceed limits authorized under the Clean Water Act, as amended • Groundwater is depleted to the degree that subsidence causes fissures to form • Groundwater quality is degraded below established Clean Water Act standards • Substantially alters the existing drainage pattern of the site or area, including the alteration of the course of a wash, stream, or river in a manner that would result in substantial erosion, siltation, or flooding onsite or offsite

All known mitigating measures have been included in the proposed action. It is assumed that the proposed action will be implemented as described, using accepted guidelines, standard operating procedures, and best management practices (BMPs); therefore, consequences described below are short-term, temporary, and less than significant in most cases.

3.1 AIR QUALITY

The Clean Air Act (CAA), as amended, establishes National Ambient Air Quality Standards (NAAQS) for the control of air contaminants or criteria pollutants to protect human health and the environment, and to prevent adverse effects to national air resources. The Arizona Department of Environmental Quality (ADEQ) is the regulating and enforcing agency for Arizona Air Quality Standards, and has adopted the U.S. Environmental Protection Agency (EPA) federal standards as the Arizona Ambient Air Quality Standards (http://www.epa.gov/air/criteria.html).

3.1.1 Nonattainment of NAAQS and Conformity Determination

Criteria pollutants with established primary and secondary NAAQS are carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), lead (Pb), sulfur dioxide (SO_2), and particulate matter equal to or less than 10 microns in size (PM_{10}) and equal to or less than 2.5 microns in size ($PM_{2.5}$). Areas that do not meet the standards set for these pollutants are called "nonattainment" areas. ADEQ, in conjunction with the EPA, has defined areas that are in nonattainment of the NAAQS. Portions of Yuma County were designated a moderate nonattainment area for the 24-hour standard of PM_{10}. Mobile emission sources, such as vehicular and agricultural equipment emissions, and blowing dust are the primary contributors to air pollutant emissions in this region. The Yuma PM_{10} nonattainment area is located in the southwestern potion of Yuma County comprising about 456 square miles or 300,000 acres. The nonattainment area is defined as follows (40 CFR 81.303):

- Township 7S, Ranges 21 and 22W,
- Township 8S, Ranges 21-24W,
- Township 9S, Range 21-25W, and
- Township 10S, Ranges 21-25W

A small portion of YPG is located in Township 7S, Range 21W and falls within the Yuma PM_{10} nonattainment area; however, the proposed locations of MTA expansion do not fall within the PM_{10} nonattainment area on the installation. Therefore, a conformity analysis under section 176 of the CAA is not required (40 CFR 51) for the proposed action.

3.1.2 Construction and Operating Permits

Title I and Title V of the CAA contain mandated regulations for the implementation of construction permitting programs and operating permit programs, respectively. ADEQ has combined these programs and requires a facility with emissions to obtain permits for all existing stationary sources of air emissions and any future stationary sources of air emissions. Due to potential emissions of nitrogen oxides (NO_x), CO, and volatile organic compounds (VOCs) exceeding 100 tons per year (tpy), YPG is classified as a Class I Major Source pursuant to Arizona Administrative Code R18-2-101.64, and ADEQ issued YPG a Title V Air Permit (#43492) in June of 2010.

Generators (driven by internal combustion engines) are used in areas on the range that do not have access to electrical lines or hard power in order to operate necessary equipment to support training programs such as lights, air conditioners, and computers. The YPG Title V Air Permit has specific requirements for operation, record keeping, and reporting associated with generators[1] (Arizona Department of Environmental Quality, 2010). Generator usage related to the proposed action is expected to be minimal and intermittent. MTA facilities use solar powered street lights to illuminate facilities, and the proposed mock villages will not require any electrical power source.

YPG submits an annual air emissions inventory to ADEQ that reports emissions of criteria pollutants. Data from the most recent YPG air emissions inventory (2011) and Yuma County (2008) are presented in Table 4. These data show that emissions from point sources at YPG account for a very small fraction of total emissions in the region.

Table 4: Yuma County and YPG Air Emissions for Criteria Pollutants

	Yuma County [(1)]	YPG [(2)]
Pollutant	**Total (tpy)**	**Point Source (tpy)**
CO	34,765	2.95
NO_X	6,782	0.31
Pb	1	0.27
SO_2	184	0.78
VOCs	8,203	13.75
PM_{10}	12,661	1.46
$PM_{2.5}$	2,615	0

(1) Source: http://www.epa.gov/air/emissions/where.htm. Data from most recent year available (2008).
(2) Source: Yuma Proving Ground 2011 Annual Air Emission Inventory.

3.1.3 Environmental Consequences and Mitigation

Minor, localized, and short-term increases in dust and air emissions would occur from construction and operational activities associated with the proposed action. Emissions would primarily consist of compounds released from burning of fossil fuels in vehicular equipment and fugitive dust releases. Emissions from motorized vehicles would contribute only a small amount of pollutants intermittently after construction; therefore, impacts are expected to be negligible.

Dust emissions from site construction and training activities would be localized, and increases in air pollutants at YPG are not be anticipated. Dust emissions would be minimized as needed with appropriate BMPs and dust abatement measures (such as watering, chemical suppressants, or placement of gravel) to prevent significant deterioration of air quality. Emission limits established under the CAA would not be exceeded and total direct and indirect emissions from implementing the proposed action would be at *de minimis* levels and below the conformity threshold value established at 40 CFR 93.153(b).

[1] If generators are used for more than one year, they will be classified as "stationary sources" and will be added to the YPG Title V air permit. The units will be managed and operated in accordance with applicable provision specified in Attachment B. III (Internal Combustion Engines) of the YPG Title V Permit (#43492 June 4, 2010) and any pertinent amendments.

The proposed areas are currently in attainment for all NAAQS. None of the existing or proposed sites are located within the Yuma County PM_{10} nonattainment area, and no sensitive receptors are known to occur within the vicinity of any of the sites included under the proposed action. Applicable requirements and processes, in accordance with Attachment B, Section III of the YPG Air Permit (Arizona Department of Environmental Quality, 2010), such as operation limitations, monitoring and recordkeeping, and reporting will be implemented in order to minimize the potential for increased emissions resulting from the intermittent use of generators at the proposed sites.

3.2 BIOLOGICAL RESOURCES

YPG is located in the Lower Colorado River subdivision of the Sonoran Desert, the driest and hottest portion of the driest, hottest desert in North America. It is characterized by broad, flat valleys and low mountain ranges with almost barren rock that supports many plant and animal species native to the Sonoran Desert (YPG 2012a). The following sections provide a summary description of vegetation and wildlife known to occur on or near the proposed MTA sites and those with the potential to occur based on habitat requirements.

3.2.1 Vegetation

Vegetation in the Yuma area is within the Lower Colorado River Valley Subdivision of the Sonoran Desert. The extreme aridity characterizing this region is reflected in open plains covered sparsely with drought-tolerant shrubs, grasses, and cacti (YPG 2012a). Most common is creosote bush (*Larrea tridentata*), found in widespread stands, or mixed with combinations of ocotillo (*Fouquieria splendens*), bursage (*Ambrosia* spp.), teddy bear cholla (*Cylindropuntia bigelovii*), and paloverde trees (*Parkinsonia* spp.), depending on landform features (Turner and Brown, 1994; Shreve and Wiggins, 1964). Hillsides support brittlebush (*Encelia farinosa*) in various combinations with other plants such as cacti, in particular the saguaro cactus (*Carnegiea gigantea*). The open plains are dissected with washes that can support less drought-tolerant plants. These plants, including trees, can grow in dense bosques throughout washes. Smoke tree (*Psorothamnus spinosus*) is a Lower Colorado River Valley endemic species that is restricted primarily to the large wash systems (Turner and Brown, 1994).

The Lower Colorado River Valley Subdivision prevails on low and gently sloping alluvial fans and terrace areas commonly referred to as bajadas. There are four plant communities (or series) of the Lower Colorado River Valley Subdivision (Turner and Brown, 1994) that are represented on the installation:

- Creosotebush-White Bursage Series- These two plants either together or alone compose most widespread and important community of the Lower Colorado River Valley subdivision (Turner and Brown, 1994).
- Mixed Scrub Series- Typically areas along washes and similar places are more diverse vegetation communities within the overall Creosotebush-White Bursage series. Dense assemblages of paloverde (*Parkinsonia* spp.), Ironwood (*Olneya tesota*), Desert lavender (*Hyptis emoryi*), Smoke tree (*Psorothamnus spinosus*), Jojoba (*Simmondsia chinensis*) and other typical Sonoran desert species may participate (Turner and Brown, 1994)
- Creosotebush-Big Galleta Series- Typically sandy areas generally found in the lowest and hottest reaches of the desert. This series is dominated by creosotebush and big galleta grass (*Pleuraphis rigida*) (Turner and Brown, 1994).

- Saltbush Series- This series is a community of gently sloping lands and valleys. Soils supporting the Saltbush series are commonly more saline than Creosotbuesh-White Bursage Series (Turner and Brown, 1994).

Of these plant communities, the prevailing community represented at both the Coyote Den and Site 2 Area is Creosotebush-White Bursage Series. Both sites exist on hillside landforms that contain relatively few saguaro cactus and minimal paloverde trees. The sites are adjacent to washes that contain more concentrated and diverse vegetation. Appendix A includes photographic imagery and brief descriptions of the vegetation found at each proposed location.

Non-native Species

Non-native plant species from other parts of the world have colonized portions of YPG and can result in changes to community composition and species abundances, particularly in the annual grasses. This can prevent successful establishment of native annual plants (Van Devender et al., 1997), including food species of Sonoran desert tortoises (*Gopherus morafkai*). A few of the non-native plant species known to occur on the installation are described below.

Athel tamarisk (*Tamarix aphylla*) and Salt Cedar (*T. hybrid*): Athel tamarisk was originally planted on the Main Post sometime around 1954 and has since spread several miles downwind, mostly where water flow has been altered through road and other construction, and where water accumulation and retention occurs in low lying areas (e.g., borrow pits). Salt cedar (hybrids of various *Tamarix* spp., possibly *T. chinensis* and *T. ramosissima* [Gaskin and Schaal, 2002]) is another *Tamarix* group found on the installation that was established mostly as a result of human activity, such as the alteration of water flow. None of these species were observed at any of the proposed locations.

Sahara mustard (*Brassica tournefortii*), Mediterranean and Arabian grass (*Schismus barbatus* and *S. arabicus*, respectively): These species are exotic winter-spring annuals that compete with native annuals and grasses for rainfall, nutrients, and microhabitats and are widely naturalized in the Sonoran Desert. These species were observed at all of the proposed sites.

Buffelgrass (*Pennisetum cilare*): YPG staff have observed and reported small stands of this species on portions of the installation (primarily on the KFR). The YPG Environmental Sciences Division removes buffelgrass when it is identified and then monitors the location for at least three years for re-growth. This species was not observed at any of the proposed locations.

3.2.2 Wildlife

Wildlife on YPG is typical of Sonoran desert scrub habitat. Some species are restricted to specific plant associations whereas others range over a wide area. Common species observed at or near the proposed MTA sites during surveys included mourning dove (*Zenaida macroura*), Gambel's quail (*Callipepla gambelii*), Phainopepla (*Phainopepla nitens*), verdin (*Auriparus flaviceps*), ash-throated flycatcher (*Myiarchus cinerascens*), black-throated sparrow (*Amphispiza bilineata*), white-crowned sparrow (*Zonotrichia leucophrys*), round-tailed ground squirrel (*Spermophilus tereticaudus*), zebra-tailed lizard (*Callisaurus draconoides*), and side-blotched lizard (*Uta stansburiana*).

Other common species found on the installation that may transit the areas are mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), kit fox (*Vulpes macrotis*), gray fox (*Urocyon cinereoargenteus*), desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), kingsnake (*Lampropeltis getula*), western diamondback rattlesnake (*Crotalus atrox*), Mohave rattlesnake (*Crotalus scutulatus*), sidewinder (*Crotalus cerastes*), roadrunner (*Geococcyx californianus*), turkey vulture (*Cathartes aura),* red-tailed hawk (*Buteo jamaicensis*), and mockingbird (*Mimus polyglottos*).

Most of the wildlife activity in the project location is concentrated in the washes adjacent to the project boundaries. The woodlands within these washes provide nesting substrate and foraging habitat for resident and migratory birds. These woodlands serve as important cooridors for wildlife movements as well as shelter and forage.

3.2.3 Special Status Species

Special status species include those listed and protected under the Endangered Species Act (ESA) as threatened and endangered (T&E), the Arizona's Native Plant Law (Arizona Revised Statutes, Title 3, Chapter 7, Article 1), and Wildlife of Special Concern (WSC) in Arizona (Arizona Game and Fish Department [AGFD], 2013). Specific surveys have not been conducted for special status species for the entire installation (1,308 square miles). Table 5 presents a summary listing of special status species in Yuma county that have potential to occur at or near the proposed Coyote Den and Site 2 expansion sites based on habitat features or migratory patterns. The table was generated using the Arizona Game and Fish Habimap program and Heritage Data Management System database (AFGD, 2013). The Habimap program allows for specific areas within a map to be selected and returns results based on the United States Geological Survey (USGS) seven and a half minute quad map in which the selected area resides. Coyote Den and the Site 2 expansion efforts exist within the USGS quad map titled Imperial Reservoir. Site-specific surveys for these species are conducted, as appropriate, to make a determination of effect for listed species with potential to occur in a project area. For additional resources on species known to occur within the YPG boundaries, refer to the YPG Integrated Natural Resource Management Plan (YPG 2012a).

Table 5: Listed Species with Potential to Occur at or Near the Proposed MTA Sites.

Nomenclature	Status* ESA	STATE	Comment
Amphibians			
Sonoran Desert Toad (*Bufo alvarius*)		SGCN	
Birds			
Gilded Flicker (*Colaptes chrysoides*)		SGCN	
Lincoln's Sparrow (*Melospiza lincolnii*)		SGCN	
Gila Woodpecker (*Melanerpes uropygialis*)		SGCN	
Arizona Bell's Vireo (*Vireo bellii arizonae*)		SGCN	
Yellow-billed Cuckoo (Western U.S. DPS) (*Coccyzus americanus*)	PS:C	WSC	Occurs in Imperial Reservoir USGS quad map. No habitat present on site.
Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	LE	WSC	Occurs in Imperial Reservoir USGS quad map. No habitat present on site.
Bald Eagle (*Haliaeetus leucocephalus*)	SC	WSC	Occurs in Imperial Reservoir USGS quad map. Could fly over but there is no nesting or foraging habitat on site.
Black-necked Stilt (*Himantopus mexicanus*)	PS		Occurs in Imperial Reservoir USGS quad map. No habitat present on site.
Least Bittern (*Ixobrychus exilis*)		WSC	Occurs in Imperial Reservoir USGS quad map. No habitat present on site.
California Black Rail (*Laterallus jamaicensis coturniculus*)	SC	WSC	Occurs in Imperial Reservoir USGS quad map. No habitat present on site.
Yuma Clapper Rail (*Rallus longirostris yumanensis*)	LE	WSC	Occurs in Imperial Reservoir USGS quad map. No habitat present on site.
Plants			
Saguaro (*Carnegiea gigantea*)		HS, SR	Occurs within project boundaries
Mammals			
Sonoran Pronghorn (*Antilocapra americana sonoriensis*)	LE	WSC	Sonoran Pronghorn were released in King Valley within Kofa NWR. Monitoring Data suggest the individuals are not likely roam this far southwest
Harris' Antelope Squirrel (*Ammospermophilus harrisii*)		SGCN	
Little Pocket Mouse (*Perognathus longimembris*)		SGCN	
Kit Fox (*Vulpes macrotis*)		SGCN	Occurs on the project site.
Pale Townsend's Big-eared Bat (*Corynorhinus townsendii pallescens*)	SC	SGCN	
Spotted Bat (*Euderma maculatum*)	SC	WSC	

Nomenclature	Status* ESA	STATE	Comment
Greater Western Mastiff Bat (*Eumops perotis californicus*)	SC	SGCN	
California Leaf-nosed Bat (*Macrotus californicus*)	SC	WSC	
Cave Myotis (*Myotis velifer*)		SGCN	
Yuma Myotis (*Myotis yumanensis*)	SC	SGCN	
Pocketed Free-tailed Bat (*Nyctinomops femorosaccus*)		SGCN	
Mexican Free-tailed Bat (*Tadarida brasiliensis*)		SGCN	
California Leaf-nosed Bat (*Macrotus californicus*)	SC	WSC	Occurs in Imperial Reservoir USGS quad map
Yuma Myotis (Myotis yumanensis)	SC	SGCN	Occurs in Imperial Reservoir USGS quad map
Reptiles			
Sonoran Desert Tortoise (*Gopherus morafkai*)	C	WSC	Nearest sighting is over 6 miles to the northeast of the project area. The project area falls outside the range maps, but there may be suitable habitat.
Gila Monster (*Heloderma suspectum*)	SC	SGCN	

* Federal: SC= Species of Concern, LE= Listed Endangered, PS:C= Partial Status: Candidate (not entire range of species), C= Candidate
State: WSC= Wildlife Species of Concern, HS= Highly Safeguarded, SR= Salvage Restricted, SGCN= Species of Greater Conservation Need
NOTE: Only listed T&E species under the ESA, classified as WSC in Arizona, or those categorized as Highly Safeguarded and Salvage Restricted (HS, SR) under the AZ Native Plant law and that may be found at the specific project location are included in the table. A detailed list of protected plant species in Arizona can be found at the Arizona Department of Agriculture Website http://www.azda.gov/ESD/protplantlst.htm and detailed lists of federally protected species can be found on the U.S. Fish and Wildlife Service Website at http://ecos.fws.gov/tess_public.
+ Data for this table was obtained using the Arizona Game and Fish Habimap program at http://www.habimap.org/

Protected Native Plants

Several native plant species protected under Arizona's Native Plant Law are found at Yuma Proving Ground, and YPG manages these species carefully when encountered in project areas. Table 4 includes the only protected species found at the proposed sites, the saguaro.

Protected Wildlife

Sonoran (Morafka's) Desert Tortoise: In December of 2010, the U.S. Fish and Wildlife Service (USFWS or Service) proposed the "Sonoran" population (desert tortoises that occur east and south of the Colorado River) of the desert tortoise (*Gopherus agassizii*) as a Candidate species for listing as Threatened or Endangered. Since that decision, this population of desert tortoise was proven to be a genetically distinct species and has been named Morafka's desert tortoise (*Gopherus morafkai*) (Murphy et al. 2011). According to the USFWS, recognizing the Sonoran desert tortoise as a new species confirms the Service's decision to evaluate this population independently from the Agassiz's desert tortoise and will not change the status of either species under the ESA or change existing recovery plans (U.S. Department of Interior, 2011). The AGFD also classify the Sonoran desert tortoise as a "Species of Greatest Conservation Need." A low density population of Sonoran desert tortoises has been known to occur on YPG, particularly on the East Arm portion and throughout northern Cibola Range. AGFD identified the Dome Rock/Trigo Mountanis Complex at the north end of the range as the most sensitive area on YPG in terms of desert tortoise habitat. All of the documented desert

tortoises over the past decade have occurred in that area (Grandmaison 2012). More recently, two desert tortoises were found on the far northeast corner of Cibola Range just east of the Dome Rock Mountains complex (Westland Resources Inc 2013). There is one historic siting of a desert tortoise near Highway 95 approzimately 6 miles northeast of the project location (YPG 2012). While no tortoises or sign were found on the site, the deeply incised washes adjaced to Site 2 have suitable caliche substrate for tortoise burrowing.

Sonoran Pronghorn: The USFWS and AGFD have implemented a project to re-establish the endangered Sonoran pronghorn (*Antilocarpa americana sonoriensis*) within its historic range, which includes the Kofa NWR, parts of the Barry Goldwater Range, and Yuma Proving Ground. As part of the re-introduction, the Sonoran Pronghorn Recovery Team has built a captive-breeding pen for Sonoran pronghorn within the central portion of Kofa NWR. This population is classified as a nonessential experimental population under section exception 10(j) of the Endangered Species Act (ESA).

In January 2013, the USFWS released nine Sonoran pronghorn from the captive-breeding pens into King Valley in the Kofa NWR. Pronghorn released from the captive breeding pens may be encountered on YPG, particularly in the Kofa Region. However, since this population is classified as a nonessential experimental population the exception 10(j) take of pronghorn from the nonessential experimental population area is allowed on YPG: "...when it is incidental to, and not the purpose of, carrying out an otherwise lawful activity within the boundaries of YPG…" (USFWS, 2010: 43, 112). The only requirement on DOD lands is to report to the Service if incidental take occurs within one of the designated population areas because of military operations (USFWS, 2010).

Section 7 of the ESA requires conferencing on any project likely to jeopardize the continued existence of the species; however, pronghorn that may be encountered on YPG are within nonessential experimental population area established under exception 10(j) of the ESA (Federal Register, Vol. 76, No. 87, May 5, 2011). Thus, conferencing is not required.

The experimental population of the Sonoran pronghorn was released into the King Valley in the extreme southeast corner of the Kofa NWR and will not likely be impacted by the proposed action on the south western corner of Cibola Range on YPG.

Southwestern Willow Flycatcher: Southwestern willow flycatchers are typically found in riverine habitat, especially within significant willow habitat. Although critical habitat for this species has been identified in Yuma County along the Colorado River, there is no riverine habitat near the project area, and therefore this species will not be affected by the proposed action.

Yuma Clapper Rail: Yuma clapper rails are typically found in fresh-water marches dominated by cattail or bulrush. Critical habitat within Yuma County has not been established for this species. The proposed action areas fall outside of any marsh land habitat therefore this species will not be affected by the proposed action.

Wild Horse and Burro: Some of the most conspicuous non-native animal species found on YPG are wild horses and burros, *Equus caballus and E.asinus.* Both species are managed by the Bureau of Land Management (BLM) under the Wild and Free Roaming Horse and Burro Act of 1971, Public Law 92-195, and Cooperative Management Agreement updated in September 1989. Management of these species is guided by the Cibola-Trigo Herd Management Area Plan

(HMAP, 1980), and the Resource Management Plan (BLM 2010). Burros and burro sign (tracks and scat) were found near all proposed MTA sites.

3.2.4 Environmental Consequences and Mitigation

Habitat and vegetation communities found at each of the proposed MTA sites are common throughout the installation, and wildlife will be able to move to adjacent areas. Project features, including structures and site access, have been designed to avoid vegetation and minimize wash crossing. There are no federally listed wildlife species known to occur within the boundaries of the proposed sites, and there are no species of federally protected native vegetation within the perimeter of the proposed MTA expansion sites.

Impacts to wildlife could include disruptions in normal behavior such as feeding, breeding, or predation. Larger, mobile animals such as foxes, mule deer, and birds can avoid the activities. Smaller, less mobile species, such as lizards and snakes, may become injured or killed by vehicles or equipment operating in the project area. 50 CFR part 21.15 provides authorization for take of migratory birds incidental to military readiness activities such as testing and training.

Sensitive bat species are unlikely to be affected by this project because the Coyote Den and Site 2 facilities are not located near potential roost sites. Any impact to foraging bats would be minimal an intermittent.

In order to prevent the spread of disease to wildlife, several MTA sites have signs posted to remind handlers to clean up after their animals. MWD handlers follow best management practices when working with animals on site. For example, handlers are required to carry waste cleanup bags and will carry used bags with them until they can be thrown into a secure trash receptacle.

Some of the habitat found on YPG is similar to habitat features associated with the Sonoran desert tortoise. The Coyote Den site and the Site 2 expansion both exist in habitat consistent with the Sonoran desert tortoise (AGFD, 2013), however no tortoise or tortoise sign were identified during site visits to each area. According to the AGFD Heritage Data Management System (HDMS), the nearest tortoise location in proximity to the proposed areas is approximately six miles (aerial) east of the eastern edge of the proposed Coyote Den area. In the event that Sonoran desert tortoises are encountered during construction or training activities, Arizona Game and Fish Department Guidelines for Handling Sonoran Desert Tortoise Encountered on Development Projects (AGFD, 2007) will be followed for the removal of the tortoise(s) from immediate dangers or threats.

Pronghorn released on the Kofa NWR may move onto YPG, particularly in the Kofa Region. These animals are very mobile and would be able to avoid most human activity. The probability of death or injury to an individual pronghorn due to military activities is extremely low. No incidental take has ever been documented on Barry M. Goldwater Range or Luke Air Force Base (Federal Register, Vol. 76, No. 87, May 5, 2011). The extent of any impact to pronghorn from this project would be restricted to YPG and would have no impact on populations of pronghorn located on Barry M. Goldwater Range, Cabeza Prieta NWR, Organ Pipe National Monument, or Mexico.

Since construction of structures will cover such a small area and will only be used during training activities, it is unlikely that this level of disturbance will have an impact on local wildlife populations. Temporary use of the site will allow wildlife to utilize the habitat and resources on and adjacent to MTA areas while not in use. Implementing mitigation measures from section 7.2.2 of the Integrated Natural Resources Management Plan (INRMP) will further reduce the likelihood of mortality for individual animals.

The following are standard mitigation management measures that will be implemented, as appropriate to eliminate or avoid adverse impacts to biological resources during site preparation activities.

- To the extent practicable, avoid and minimize disturbance during the breeding and nesting season of sensitive species to prevent injury and mortality of young.
- Avoid or minimize trimming trees during the breeding and migrating season (March 15th to September 15th).
- In the event a desert tortoise is discovered during training or testing, the tortoise shall be avoided. If necessary to move the tortoise coordinate with ESD and follow desert tortoise handling guidelines.
- Notify USFWS and AGFD if Sonoran pronghorn are observed on the installation or injured during mission activities.
- Modify project boundaries or location, if feasible, to minimize impact to sensitive species and habitats.
- Limit vehicle use to existing roads and facilities to the extent practicable.
- Conduct plant surveys for rare natives and plants listed in the Arizona Plant Law, and when feasible, protect in situ or remove and plant elsewhere if military activities will result in death of vegetation.
- Avoid accumulation and retention of water in unfenced areas that could attract wild horses and burros to the area or promote growth of non-native vegetation species.
- Wildlife permits in addition to the YPG scientific collecting permit (SP614327) will be obtained as required by law.

3.3 CULTURAL RESOURCES

Cultural resources include any prehistoric or historic district, site, building, structure, object included on, or eligible for inclusion on, the National Register of Historic Places (NRHP), including artifacts, records, and material remains related to such properties or resources.

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, requires that federal agencies with jurisdiction over a proposed federal project take into account the effect of the undertaking on cultural resources listed, or eligible for listing, on the NRHP, and afford the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) an opportunity to comment with regard to the undertaking. To facilitate this, YPG has performed numerous archaeological surveys to identify potential cultural resources.

Detailed information about cultural resources on the installation and their management is available in the YPG *Integrated Cultural Resources Management Plan* (Rhode and McDonald, 2012) and is hereby incorporated by reference in this environmental analysis. The following discussion focuses on cultural resources specific to the proposed action.

3.3.1 Area of Potential Effect

Under the no action alternative, no new MTA sites would be developed, and there would be no impact to cultural resources; therefore, the action alternative being considered (Alternative A) comprises the Areas of Potential Effect with regard to cultural resources. The following discussion focuses on information specific to the proposed locations for MTA expansion.

Many prehistoric sites in this region are located on terraces above river floodplains and are surface manifestations with few diagnostic artifacts that can be dated to a specific prehistoric period. Prehistoric sites do occur near the proposed MTA expansion areas and consist mainly of lithic artifact scatters, rock features, cleared circles, ceramic sherds, and trails or combinations thereof. Although cleared circles are a common feature at cultural sites near the proposed MTA expansion locations, recent and ongoing studies show that many of these features are natural occurrences and not manmade as originally thought (McAuliffe and McDonald, 2006; McDonald et al., 2004).

Historic sites tend to occupy transportation corridors along river valleys, between mountain ranges, and over mountain passes and are often located at or near the same locations as prehistoric sites, indicating similar needs for access to water and other resources. Historic sites are common in the vicinity of the proposed MTA sites.

3.3.2 Site-specific Cultural Investigations

The proposed locations for MTA expansion (including access roads) were subjected to Class III pedestrian archeological surveys. There are currently no known archeological sites within the boundaries of the proposed Site 2 expansion area. One previously recorded archaeological site is located within the boundary of Coyote Den. This site has been determined not eligible to the NRHP and has had SHPO concurrence. Establishment of Coyote Den is not anticipated to impact the quality of the site. During a survey of proposed access roads for Coyote Den, one isolated occurance was found and has been recommended as not eligible for NRHP. It is still pending SHPO concurrence. There are an additional 23 previously recorded sites on YPG within one mile of both the Coyote Den and Site 2 expansion areas. One site is determined eligible for the NRHP, five have been determined not eligible, and 17 sites are of undetermined eligibility. The proposed action is not expected to affect any known cultural sites or resources.

3.3.3 Traditional Cultural Properties

In accordance with Section 106 of the NHPA, US Army Garrison Yuma is consulting with federally recognized Tribes who have expressed an interest in the cultural heritage of YPG land. At this time, no traditional religious or cultural properties have been identified that would be impacted by the proposed action.

3.3.4 Environmental Consequences and Mitigation

Consultation under Section 106 of the NHRP is ongoing; however, the proposed action is not anticipated to adversely affect prehistoric or historic sites eligible for the NRHP or Native American religious or other cultural activity areas. YPG will not issue a final decision document until the Section 106 consultation process is completed and any required mitigation is implemented.

Unanticipated discoveries of archeological remains may occur even in areas that have been previously surveyed. To avoid disturbance of known and previously undiscovered or undocumented cultural resources or remains, the following measures will be taken.

- Construction equipment and traffic will use existing roads or marked routes to access project sites.
- Grading and smoothing of surface soils will be confined to the delineated boundaries for expansion areas and related access roads.
- If archaeological remains are uncovered or discovered during site preparation activities, all activities in the area of the find would be stopped, and the YPG Cultural Resources Manager will be notified immediately. The YPG Cultural Resources Manager would assess the significance of the discovered resources in accordance with the NRHP evaluation criteria and the resources would be managed in accordance with 36 CFR 800, as appropriate.
- If human remains are encountered, all project activity on or near the discovery site shall cease immediately. The human remains shall be protected from further disturbance, and the Garrison Manager, Cultural Resources Manager, and the Emergency Services Directorate will be notified immediately.

3.4 HEALTH AND SAFETY

The standards applicable to the evaluation of health and safety effects differ for workers and the public. The Occupational Safety and Health Administration is responsible for protecting worker health and safety in non-military workplaces. Regulations that specify and implement safety procedures for Army operations and activities at YPG applicable to the proposed action are:

- Yuma Proving Ground Standing Operating Procedure for Range Operations YP-YTPO-P1000 (September, 2007) prescribes general range control procedures, instructions, and information necessary for safe conduct of all types of test operations, demonstrations, training, and ground and airspace utilization at Yuma Proving Ground.
- Yuma Proving Ground Regulation 385-1 (April, 2007) provides specific guidance for all safety programs at YPG and applies to all personnel working and living at YPG to include military, civilian, contractor, tenant personnel, and dependents.
- Army Regulation (AR) 385-63 (May, 2003) prescribes Army-wide range safety policies and responsibilities for firing ammunition, lasers, guided missiles, and rockets and provides guidance for the application of risk management in range operations.

A number of sites regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and its extension, the Superfund Amendments and Reauthorization Act, and the Resource Conservation and Recovery Act (RCRA) occur on Yuma Proving Ground. Although YPG has conducted Phase I, II, and III site investigations for portions of the installation, few of the CERCLA and RCRA sites have not been fully investigated and characterized. The proposed MTA sites are not located on or adjacent to any sites at YPG that are being investigated or undergoing restoration in accordance with CERCLA or RCRA. Health and safety risks are inherent to the mission, terrain, and climate at YPG. Emergency medical facilities at YPG are limited to an outpatient medical clinic. Transport time from within the installation to the clinic ranges from 15 to 60 minutes. Serious injuries or illness can be treated at Yuma Regional Medical Center, and helicopters are available for emergency

transportation. Fire protection at YPG is provided by fire stations at Laguna Army Airfield (LAAF), Kofa Firing Range (KFR), and a secondary station in the Main Administrative Area (MAA). YPG Law Enforcement and Security Division provide law enforcement personnel and security services to YPG (YPG 2001a, COE 1992b).

The installation's remote location poses inherent, potential risks such as exposure to the extreme heat, lack of water, unexploded ordnance (UXO), and dangerous wildlife (e.g., rattlesnakes, Africanized honey bees, and scorpions) to YPG personnel. In addition, construction activities associated with the proposed action have potential to impact worker safety.

3.4.1 Environmental Consequences and Mitigation

Implementation of the proposed action would require additional construction activity on YPG, increasing the likelihood of potential impacts to worker safety at construction sites; however, best management practices would minimize or eliminate potential impacts. In addition, the locations of the proposed sites and associated access roads were chosen with ease of construction and emergency vehicle accessability in min.

To keep the public from entering restricted areas, warning signs are posted throughout the installation near both boundaries and public access roads, and training sites are controlled through a gated entry to restrict access. Site 2 already contains a gated entry on the main access road to the site. YPG personnel who work outdoors receive safety and awareness briefings and carry cellular phones and/or two-way radios. In addition, an environmental and safety briefing addressing issues specific to YPG will be completed by all personnel involved in construction and operation of the facilities.

YPG has developed a Facility Emergency Response Plan to facilitate quick, appropriate responses in the event of an unauthorized release of potentially hazardous material. In addition, YPG has stringent operating and security procedures designed to minimize or eliminate accidents and injuries as a result of mission related activities (YPG 2012b).

Military personnel who travel to YPG for training are given a safety briefing, have mandatory DOD safety training, environmental compliance training, and typically have attended desert survival training through the Army or Marine Corps. In addition, the proposed sites were chosen with proximity to emergency services in mind and will allow for a faster emergency response time than other locations further downrange.

Due to YPG best management practices, preparation and operational activities at the proposed MTA sites will not adversely affect the health and safety of YPG personnel or the public and will not result in violation of Federal or State health and safety regulations.

3.5 LAND USE, RECREATION, AND AIRSPACE

The land base of YPG is dedicated to military training, testing, and evaluation, which requires that most of the land be reserved for firing ranges, impact areas, mobility (vehicle) test courses, drop zones, mine fields, and other testing and training mission related support facilities. Many of these activities and facilities require large open areas with associated safety and buffer areas, as well as restricted airspace.

3.5.1 Installation Land Use

YPG is subdivided into three geographic and functional areas; (1) the Laguna Region, (2) the Cibola Region, and (3) the Kofa Region (see Figure 1). Below is a brief description of each of these regions and the types of activities that typically occur within each.

Cibola Region: This region is mostly the area of YPG located west of U.S. Highway 95 (excluding the Laguna Region). The activities in the Cibola Region are diverse and include testing of aviation weapons and systems including unmanned aerial systems, air cargo delivery systems, ground combat systems, a variety of mine and countermine activities, including detection and elimination systems for improvised explosive devices, and soldier and tactical weapons training activities.

Kofa Region: This region is the area east of Firing Front Road including the East Arm portion of YPG and is primarily used for direct and indirect firing of artillery and other weapons and munitions test activities such as deployed mines, improved conventional munitions, instrumented projectiles, electromagnetic gun, mine and countermine activities, radar/sensor systems, counter electronic warfare, and soldier and tactical weapons training activities.

Laguna Region: This region is the area where cantonment areas and population centers are primarily located. The cantonment areas in this region include the Main Administrative Area (MAA), where most public works functions, Family Morale, Welfare, and Recreation services, and post housing are located; LAAF, where aviation support functions are based; and the YTC (formerly Mobility Test Area and Materiel Test Directorate), which is the location of Command functions (Garrison and Test) and their associated offices. In addition, MTA areas and drop zones used by the Military Free-Fall School and training units are located in this area. The Kofa cantonment area adjacent to the KFR is located west of Firing Front Road and east of U.S. Highway 95 and is comprised of administrative offices and operational support functions; therefore, it is also included as part of the Laguna Region. Soldier and non-firing tactical training activities also take place within the Laguna Region. The proposed action would take place in the Laguna Region.

3.5.2 Recreation

General recreation activities and facilities at YPG are mostly located within or near MAA and include a RV camp, a variety of events and museums available to the public, and recreational facilities (gym, pool, stables, etc) for YPG personnel and families.

In compliance with the Sikes Act (1964) YPG has established a hunting program that accommodates hunting in designated areas on the installation during established hunting seasons[1] as per the Yuma Proving Ground Hunting Program Rules and Regulations (http://www.yuma.army.mil/hunting_rules.shtml). The designated hunting area nearest the proposed project areas is the Martinez Hunting Area (see figure 5). Access to designated hunting areas on YPG requires a valid license from AGFD and an access permit issued by the YPG Environmental Sciences Division.

[1] Current hunting season dates are January 1st through the last day of quail season and from September 1st through December 31st.

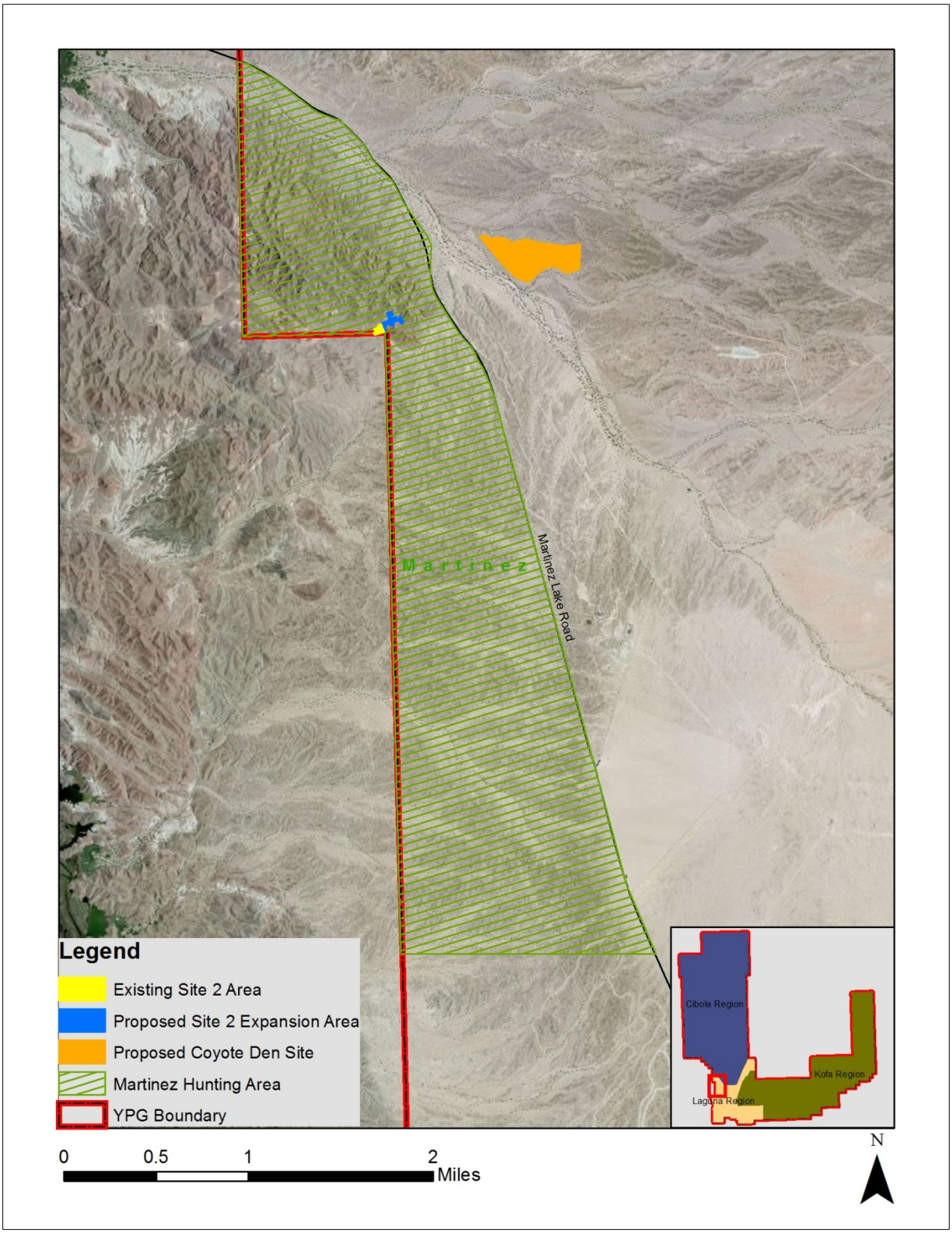

Figure 5: Martinez Lake Road Hunting Area and Proposed MTA Expansion Sites

3.5.3 Airspace Resources

The majority of airspace associated with YPG is classified as restricted (refer to Figure 2), and the proposed sites are located within restricted airspace with suitable operational designations (i.e., surface to 30,000 feet).

3.5.4 Surrounding Land Use

Most of the land adjacent to YPG is public lands managed by other federal agencies for specific purposes, such as wildlife refuge or recreation (refer to Figure 1). There are a few discrete areas of private or state land; however, there are no large cities or towns that abut the installation boundary. Most of the land is remote desert landscape with little or no development. The nearest area with development is along the southern portion of the YPG's western boundary and is centered around Martinez Lake and other recreational establishments on the Colorado River.

3.5.5 Environmental Consequences and Mitigation

The proposed sites are located within the Laguna Region and are compatible with existing land use in that region. These sites will not degrade the land to the extent it will prohibit current or planned uses. The proposed location for expansion of Site 2 is in close proximity to the installation boundary; however, activity at these sites will not adversely affect surrounding land use since operational activities and associated danger zones related to the proposed action will always fall within installation boundaries.

Site 2 is located within the designated boundary of YPG's Martinez Lake Road Hunting Area; however, hunters and accompanying parties are required to coordinate with YPG Range Control and obtain a range clearance before entering YPG boundaries for recreational hunting activities. Requirements to obtain a YPG Hunting Permit include completion of a range safety briefing and registration of all firearms brought on to the installation. As part of the YPG Hunting Program Hunting Safety (http://www.yuma.army.mil/hunting_safety.shtml), hunters and their accompanying hunting party members are reminded: "occasionally, due to testing, some affected hunting areas may be temporarily closed."

3.6 SOIL RESOURCES

The surface soils of YPG were mapped and described by the Natural Resources Conservation Service (formerly the Soil Conservation Service) and have been classified by the U.S. Department of Agriculture as aridic and hyperthermic with lithic and typic torriorthents on the hilly and mountainous terrain. Mean soil temperatures are at least 72°F with more than a 9°F difference between summer and winter temperatures (U.S. Army Yuma Proving Ground, 2001). Soil depths at YPG range from very deep in alluvial basins to very shallow in the mountain regions where bedrock is often exposed. The majority of YPG soils were characterized as ranging from extremely gravelly or cobbly sand, to very fine, sandy loam (Soil Conservation Service, 1991).

The proposed location for Coyote Den training area is located on soils in the the Gunsight-Chuckwalla complex, which consists of well-drained fan terrace formations with a five to forty-five percent slope. These soils are very deep with moderate permeability. The proposed location for Site 2 expansion lies on both the Lithic Torriorthents and Typic Torriorthents soil complex, and the Carsitas-Chuckwalla complex. Lithic Torriorthents and Typic Torriorthents soils are

comprised of excessively drained hills or mountains and have a slope anywhere from fifteen to sixty percent. The Carsitas-Chuckwalla complex is described as dissected relic beach terraces and has a slope of one to thirty percent. The soils are excessively or well drained with rapid to moderate permeability and moderate corrosivity.

3.6.1 Environmental Consequences and Mitigation

Disturbance of soil during site preparation will be limited to the extent practicable and will be contained within the designated project footprint. Significant adverse impacts to soil resources will not occur as a result of the proposed action; however, the following mitigation and management will be implemented during site preparation and operations to avoid or minimize potential impacts to soil resources.

- Disturbance of soil will be kept to the minimum necessary for operational purposes and will be confined to the delineated boundaries for each of the sites and access roads to the extent practicable.
- Erosion control procedures and techniques will be used to avoid or minimize potential for severe erosion to occur.
- Drip pans will be used under construction equipment when not in operation to prevent soil contamination from undetected leaks and under any generators that are used at each site.
- Vehicle and equipment traffic will use designated access roads.
- Any leaks or accidental releases of petroleum products (i.e., fuel or lubricants) will be immediately contained and cleaned up in accordance with an approved site Spill Prevention, Control, and Countermeasures plan (if applicable).

3.7 TRANSPORTATION AND INFRASTRUCTURE

3.7.1 Transportation

Transportation on the installation is accomplished through a network of paved and unpaved roads and a variety of trails and unimproved roads. Most paved roads are concentrated around the cantonment areas with gravel roads, such as Cibola Lake Road, serving as the primary connections to remote areas of the installation. Gravel roads are maintained on a regular basis and other unimproved roads are maintained (graded and or watered) as needed to provide access to various test and training areas. Unimproved access roads will be created for both Site 2 expansion and Coyote Den and will be maintained as needed.

Roads open to public access that traverse the installation are limited to U.S. Highway 95, Imperial/Laguna Dam Road, Martinez Lake Road, Cibola Lake Road, and Ehrenberg Road. Roads located at MAA are open to residents, employees, and authorized visitors. Other roads in the Kofa and Cibola regions are closed to the general public except in emergency or on a case-by-case basis.

3.7.2 Utilities and Infrastructure

Infrastructure addresses those facilities and systems that provide power, water, wastewater treatment, and the collection and disposal of solid waste.

Electric Power: Electricity at YPG is obtained from offsite providers with the majority of power being provided by the Western Area Power Administration. Electricity is readily available in the main cantonment areas, such as MAA, YTC, and KFR administrative area. Electrical power in remote areas of the installation is primarily supplied through the use of mobile generators. Some sites also use solar powered street lights to provide lighting. MTA sites would primarily rely on the solar street lights but may use generators intermittently for operational activities.

Water: YPG obtains its water supply from groundwater wells and water treatment plants located at MAA, YTC, and KFR to supply potable water to cantonment areas. Bottled water vendors or bulk trucks supply water (potable and non-potable) at remote locations.

Wastewater and Sanitary Services: Wastewater from developed areas is treated in wastewater lagoons located in the main cantonment areas (MAA, LAAF, YTC, and KFR). Septic systems are used to manage wastewater generated at outlying compounds such as Castle Dome Annex. Portable toilets are used in remote areas of the installation and will be used at the proposed MTA sites as needed.

Solid Waste: YPG operates a permitted non-hazardous waste landfill for the disposal of inert material. Most solid waste generated on the installation is either disposed in the YPG landfill or collected and transported for offsite disposal in permitted landfills in the area.

3.7.3 Environmental Consequences and Mitigation

Existing utilities, infrastructure, and associated support will be sufficient to sustain activities at the proposed sites of MTA expansion. Travel to and from the installation is not expected to increase substantially under the proposed action. Martinez Lake Road is a public access road in close proximity to the sites; however, Martinez Lake Road is not expected to be closed or restricted due to activities related to the proposed action. Access roads will be created and ABC may be added in some cases to prevent soil erosion and minimize dust. These roads will be travelled only for operational activities and will not be open to the public. Therefore, no significant impacts are anticipated from implementation of the proposed action.

3.8 WATER RESOURCES

YPG is within the Colorado/Lower Gila watershed. The Colorado River is located west of the installation and flows in a north to south direction, while the lower Gila River is south of YPG and flows in an east to west direction.

3.8.1 Surface Water

There are no perennial lakes, streams, or mountain springs within the boundaries of YPG; however, there are numerous ephemeral washes that originate on or cross the installation. Washes within the Kofa Region flow toward the lower Gila River while those within the Cibola Region and Laguna Region primarily flow toward the Colorado River. There are washes flowing within the general vicinity of the proposed sites. Several ephemeral washes traverse the

landscape adjacent to the proposed locations. These desert washes are dry most of the year, which is characteristic of Sonoran Desert precipitation patterns. Only after significant rainfall events do these washes carry surface drainage towards the Colorado River to the west. The proposed project has been designed in such a way to avoid washes. Acces to the sites mininmize crossing of ephemeral washes to the greatest extent possible.

3.8.2 Groundwater

Groundwater on YPG is found in hydrologic basins located below the surface. The Colorado and Gila rivers replenish groundwater for the Yuma region. Depth to groundwater at the installation varies dependent upon geology, location, and thickness of basin alluvium. Known depths to groundwater range from 30 feet (near MAA) to more than 1,000 feet (in north Cibola Region).

3.8.3 Environmental Consequences and Mitigation

While the proposed MTA sites do not necessarily contain named major washes within their boundaries, there are minor channels in or near the sites that drain a substantial amount to the surrounding area. Each of the site footprints and activities will be oriented to avoid wash channels to the extent practicable. In addition, access roads may have to cross washes to provide access to the sites; however impacts will be minimal due to the management practices and mitigations listed below.

To further avoid or minimize the potential for impacts to surface water resources during use of these sites or any necessary construction, the following mitigation and management practices will be required:

- Appropriate storm water permits will be obtained and a Storm Water Pollution Prevention Plan for construction activities, as appropriate, will be prepared and implemented in accordance with the Arizona Pollutant Discharge Elimination Construction General Permit.
- Dredge or fill in waters of the U.S. will be done in accordance with Clean Water Act (CWA) Section 404 permitting requirements.

Preparation, operation, and activities at the proposed MTA sites will not require substantial use of groundwater resources. Use of drip pans under construction equipment and generators will prevent any accidental releases from reaching ground water. Therefore, groundwater quality will not be degraded below CWA standards, and significant impacts to groundwater are not anticipated as a result of the proposed action.

3.9 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

Section 102(A) (v) of the NEPA requires that environmental analysis include identification of ". . . any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that are not replaceable within a reasonable period. Preparation, operation, and activities at the proposed MTA sites would result in minor commitments of such resources as fuel for operation of vehicles and generators, explosives and projectiles in the weaponry, and water for dust suppression. The level of use for these resources is not anticipated to be substantially more than current use.

3.10 CONFLICTS WITH FEDERAL, STATE, OR LOCAL LAND USE PLANS, POLICIES, AND CONTROLS

The proposed action to expand Site 2 and create Coyote Den at YPG will not result in a conflict with any known Federal, State, or local land use policies and controls. Further, the proposed action is consistent with YPG's designated land use as a military installation. All site preparation, operation, and activities will comply with applicable environmental laws and regulations and the YPG Environmental Sciences Division will oversee or initiate any environmental permitting requirements prior to project activities.

3.11 CUMULATIVE EFFECTS

Cumulative impacts on environmental resources result from incremental impacts of an action, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative effects create spatial (geographic) and temporal (time) perturbations, and may arise from single or multiple actions resulting in additive or interactive effects (CEQ 1997). Cumulative impacts can result from minor, but collectively substantial actions undertaken over a period of time by various agencies (Federal, State, and local) or individuals (40 CFR 1508.7).

Council on Environmental Quality (CEQ) guidelines state that cumulative effects analyses should be limited to effects that can be evaluated meaningfully by decision-makers. These guidelines further state that the area to use in defining the cumulative impacts geographical boundary should extend to the point at which the resource is no longer affected significantly (CEQ 1997). For the purpose of this analysis, a geographic boundary of five miles was evaluated to determine the area for consideration for projects that could reasonably be expected to contribute to cumulative impacts when considered in conjunction with the proposed action based on topographic barriers and ecological factors. Table 6 shows past, present, and reasonably foreseeable actions within or reasonably close to the designated area of analysis.

Past and ongoing projects have potential to affect resources in the analysis area, however due to temporal and spatial separation of projects and the temporary nature of the effects (lasting mainly for the duration of construction), cumulative effects are not expected to be significant.

No mitigation measures are recommended to specifically address the cumulative effects of the proposed action (Alternative A). The potential for a resource, ecosystem, and/or human community to be significantly impacted by the proposed action is unlikely on both a regional and cumulative scale. The proposed action will not significantly add to the stress or ability of a resource, ecosystem, or community to recover and will not leave the ecosystem, resource, or community vulnerable to rapid degradation in conjunction with other past, present, and future projects.

Table 6: Past, Present, and Future Projects of Regional Interest

Project/Agency	Location/Description	Date [(a)]	Effects Analysis
Long Range Munitions Expansion on Cibola Range	Several sites (< 1 acre) will serve as gun positions for the testing of munitions. Three new impact areas will be designated as well.	April 2013	The sites have potential for soil disturbance intermittently and creation of some noise; however no impacts were expected to have a significant effect because several sites exhibit previous disturbance to land use resources and noise studies have shown no significant impact.
Cibola Impact Areas, YPG	Designated 21 impact areas within Cibola Region at YPG to support increased work load (YPG, 2011a)	April 2011	The impact areas included in the project were all located within areas of known UXO contamination and access is restricted to YPG personnel and limited to use of existing roads and trails. None of the impact areas are "prepared" (graded, fenced, etc..)
Materials Analysis Laboratory, YPG	Laguna Region at YPG. Construct new laboratory facility to replace existing materials lab at YPG (YPG, 2011b).	September 2011	This facility is planned within the YTC area of the Laguna Region at YPG and will be constructed on previously disturbed land adjacent to the existing laboratory. No significant impacts are anticipated to result from this project and will not contribute cumulative effects to the proposed action.
Optimized Fuel Facilities at U.S. Army Yuma Proving Ground, YPG	Laguna Region at YPG. Construct and operate new state-of-the-art fuel facilities at three locations within the Laguna Region at YPG (YPG, 2011c).	November 2011	These facilities are planned within the YTC, Kofa, and LAAF areas of the Laguna Region at YPG and will be constructed on previously disturbed land adjacent to the existing roads and buildings. No significant impacts are anticipated to result from this project and will not contribute cumulative effects to the proposed action.
Persistent Surveillance Systems, YPG	Designating several pads for aerostat platforms and sensor technology activities (YPG 2011d).	December 2011	These facilities are planned in different areas throughout YPG including both the Kofa and Cibola ranges. After evaluation, no significant impacts are expected from the proposed action and any possible cumulative effects are minimized or eliminated due to the temporary nature of construction activities.

[(a)] The "Date" given is the date of the reference document (EA, EIS, news release, etc…), or if known, the anticipated construction or implementation date.

4.0 FINDINGS AND CONCLUSIONS

Valued Environmental Components at YPG and in the region were evaluated against the activities and actions associated with expanding the Site 2 MTA area and establishing Coyote Den MTA in the Laguna Region of YPG. Based on the evaluation in this supplemental EA, it was determined that impacts to soils, water, biological resources, cultural resources, air quality, land use, recreation and airspace, health and safety, and transportation, utilities, and infrastructure could result from implementation of the proposed action. The potential for adverse impacts will be minimized by implementation of mitigation measures and BMPs described in Chapter 3. All aspects of the proposed action will follow applicable plans, policies, and procedures, and standard BMPs will be implemented to reduce or prevent undesirable effects resulting from project implementation. Effects to socioeconomic values, environmental justice, visual and aesthetics, wild and scenic rivers, coastal zone management, floodplains, geology and geography, hazardous and toxic substances, meteorological conditions (climate), noise, and prime farmlands were analyzed in section 3.0 and were eliminated from further consideration in this evaluation because impacts to those resources would not occur or would be negligible. The discussion in section 3.0 presented the rationale for why these resources were eliminated from further detailed analysis. This approach allowed the analysis of potential impacts to focus on those resources that would potentially be impacted by the proposed action.

Based on the analysis presented in this EA, implementation of the *Alternative A– To Establish Coyote Den Training Area and Expand Site 2 Military Training Area* including all applicable mitigation measures, did not reveal the potential for significant environmental effects. Therefore, preparation of an Environmental Impact Statement is not required, and a Finding of No Significant Impact (FNSI) is recommended.

5.0 COORDINATION AND PREPARATION

YPG sent scoping letters to the entities listed below on March 21, 2013. A Notice of Availability for the EA and draft FNSI was published on May 12, 2013 and copies of the EA and draft FNSI were be sent to stakeholders who requested a copy during scoping. The EA and draft FNSI were available by request to the YPG NEPA coordinator at 301 C Street, IMYM-PWE, Yuma, AZ or via email to usarmy.ypg.imcom.mbx.nepa@mail.mil. In addition, the EA was posted on the YPG Website at www.yuma.army.mil/mhub_documents.shtml. The EA comment period ended on June 11, 2013. YPG assessed all comments received and modified into the EA, as appropriate.

Federal Agencies
Bureau of Indian Affairs, Western Regional Office
Bureau of Land Management, Yuma Field Office
Bureau of Reclamation, Yuma Area Office
Marine Corp Air Station Yuma, Environmental Department
U.S. Customs and Border Protection, Yuma Sector
U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office
U.S. Fish and Wildlife Service, Cibola National Wildlife Refuge
U.S. Fish and Wildlife Service, Imperial National Wildlife Refuge
U.S. Fish and Wildlife Service, Kofa National Wildlife Refuge
U.S. Fish and Wildlife Service, Southwest Arizona National Wildlife Refuge Complex
USDA Natural Resources Conservation Service, Yuma Service Center

Native American Tribes
Ak-Chin Indian Community
Chemehuevi Indian Tribe
Cocopah Indian Tribe
Colorado River Indian Tribes
Fort McDowell Yavapai Nation
Fort Mojave Indian Tribe
Gila River Indian Community
Hopi Tribe
Quechan Indian Tribe
Salt River Pima-Maricopa Indian Community
San Carlos Apache Tribe
Tohono O'odham Nation
Yavapai-Apache Nation
Yavapai-Prescott Tribe

Local Agencies
Yuma Chamber of Commerce, Military Affairs Committee
City of Yuma, Community Development
La Paz County, Community Development
Yuma County, Development Services

Private Entities
Arizona Deer Association
Arizona Desert Bighorn Sheep Society
Arizona Historical Society
Arizona Wilderness Coalition
Audubon Society
Center for Biological Diversity
Sierra Club
Yuma Valley Rod and Gun Club

State Agencies
Arizona Department of Agriculture, Native Plant Program
Arizona Department of Environmental Quality, Administrative Counsel
Arizona Department of Environmental Quality, Air Quality Planning Section
Arizona Department of Environmental Quality, Federal Project Unit
Arizona Game and Fish Department, Project Evaluation Program
Arizona Game and Fish Department, Yuma Habitat Program Manager

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APPENDIX A
Biological Review and Evaluation of Proposed Coyote Den and Site 2 Expansion Area

The proposed MTA sites were visited in March of 2013 to evaluate the vegetative communities and wildlife or habitat functions for each location. Vegetation and wildlife observed during the site visits is described below for each site and a photo showing the site condition is provided.

Site 2 Expansion

Site 2 Expansion layout. The proposed structure locations are located on ridges or slopes with minimal vegetation. The surrounding area has numerous incised washes that support paloverde and ironwood. Evidnece of burrowing was found in the caliche along some of the surrounding washes but it could not be attributed to desert tortoise. Wildlife detected in the area included loggerhead shrike, Say's phoebe, ash-throated flycatcher, verdin, western whiptail, and great basin collared lizard.	
Polygon 1. Photo taken facing NE. Polygon 1 is a previously disturbed area that is void of vegetation. This area was cleared during the previous construction efforts of the existing Site 2 structures to allow future expansion of training activities.	

Polygon 2. Photo taken facing SE. Polygon 2 has some previous disturbance from activities associated with the development of Site 2 along the western edge of the polygon. Along the western edge of the polygon there is some surface runoff that has created small pools of storm water. Vegetation in the vicinity of Polygon 2 consists of *Larrea tridentata, Ambrosia* spp., *Encilia farinosa, Asclepias albicans* and *Geraea canescens.* No wildlife was observed during the site visit.	
Polygon 2. Photo taken facing NE. Polygon 2 has some previous disturbance from activities associated with the development of Site 2 along the western edge of the polygon. Along the western edge of the polygon there is some surface runoff that has created small pools of storm water. Vegetation in the vicinity of Polygon 2 consists of *Larrea tridentata, Ambrosia* spp., *Encilia farinosa, Asclepias albicans* and *Geraea canescens.* No wildlife was observed during the site visit.	

Polygon 3. Photo taken facing N. Polygon 3 lies just east of Polygon 2 on a small hill. Vegetation on the hill is sparse and consists of primarily *Larrea tridentata* and a few small annual grasses. A small wash runs south of the area and contains a large saguaro (approximately 10 feet) (*Carnegiea gigantea*) and a small paloverde tree (*Parkinsonia* spp.). The saguaro lies outside of the proposed action area and will not likely be impacted by training activities.	
Polygon 3. Photo taken facing N. Saguaro and paloverde in small wash south of Polygon 3. Two other saguaros exists within the vicinity (outside the project polygons) just north of the proposed access road from Polygon 1 to Polygon 3 and east of Polygon 3.	

Polygon 4. Photo taken facing N. Polygon 4 exists on a sparsely vegetated south facing slope just north of Polygon 1. The general area has seen some previous disturbance from earth moving equipment possible "borrowing" soil from the area. Vegetation consists in the vicinity consists of *Larrea tridentata, Ambrosia* spp., *Encilia farinosa, Asclepias albicans, Parkinsonia* spp. and *Geraea canescens.* No wildlife was observed during the site visit.	

Coyote Den

Coyote Den layout and saguaro cactus locations. The site is located on desert pavement along ridges with desert washes to the north and south. The wash woodlands to the southwest and north of the site support rich and diverse wildlife. Species detected include verdin, ash-throated flycatcher, black-tailed gnatcatcher, phainopepla, Bullock's oreol, white-crowned sparrow, house finch, round-tailed ground squirrel, zebra-tailed lizard, desert iguana, side-blotched lizard and desert horned lizard. Numerous tracks and scat from Equine species were visible during site visits to Coyote Den. Four adult wild burros were seen along the proposed northern access road. Caliche burrows were not evident along the washes, however one possible kit fox burrow was found.	

Coyote Den. Western edge of project area facing E. The general land form for the Coyote Den area is set atop numerous hills and is relatively restricted to the hill tops, avoiding the ephemeral washes that border the hills. Vegetation for the area is typical of the Lower Colorado River Subdivision and consists of primarily *Larrea tridentata* and *Ambrosia* spp.. Six saguaro cactus occur within the project boundary and one lies just south of the southern edge of the project area.	
Coyote Den. Intersection of proposed access roads near the center of the project area. Photo taken facing NE. The northern road of the proposed project will traverse a small wash that includes moderate to large trees, primarily *Olneya tesota* and *Parkinsonia* spp.. Other notable species within the wash are *Bebbia juncea* and *Encilia farinosa*.	
Coyote Den. Southern section of the proposed area. Photo taken facing NW. The southern portion of the Coyote Den area occupies an area lower in elevation than the rest of the site. This area lies north of a large wash with many large *Olneya tesota* and *Parkinsona* spp. trees. The boundary for the area does not extend into the wash and the habitat contained within the wash should remain undisturbed. Four large saguaro cacti (larger than three meters) exist in the area but outside of any of the proposed building structure construction areas.